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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/218,997	12/22/1998	TERUAKI FUKAMI	8565D-7213	2370

26021 7590 11/05/2003

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LOS ANGELES, CA 90071-2611

EXAMINER
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MCKANE, ELIZABETH L

ART UNIT	PAPER NUMBER
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1744

DATE MAILED: 11/05/2003

29

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/218,997

Applicant(s)

FUKAMI, TERUAKI

Examiner

Leigh McKane

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1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,6,8,10,14,15 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,8,10,14,15 and 19-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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***Claim Rejections - 35 USC § 112***

1. Claims 14, 15, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims above all recited preparing "water of a chemical solution" according to claims 4 or 6. However, claims 4 and 6 only recite the preparation of water. No chemical solution is recited.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 4, 14, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashida et al (U.S. Patent No. 5,290,361) in view of Filson et al (U.S. Patent No. 5,518,624).

Hayashida et al teaches storing a silicon wafer in water, wherein the storage water is UPW containing a chelating agent (col.7, line 61 to col.8, line 5) and a surfactant (col.8, lines 11-14). See also Example 1. Known chelating agents are EDTA, NTA, or CyDTA (col.5, lines 5-11). Although Hayashida et al teaches that the UPW must contain only minute amounts of Fe (0.1 ppb or less) and Al (0.1 ppb or less), the concentration of Cu is not disclosed. However, Filson et al teaches high purity water for use in semiconductor processing containing Cu in an amount below 0.005 ppb, Fe in an amount less than 0.1 ppb, and Al in an amount less than 0.007 ppb. See Table II, col.15. As Filson et al teaches that it is imperative to use water free of all

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contaminants in semiconductor processing (col.1, lines 41-50) in order to avoid contamination of substrates, it would have been obvious to use the water of Filson et al as the UPW used in the method of Hayashida et al.

In addition, Hayashida et al teaches a method of preparing a chemical solution containing a chelating agent and a surfactant wherein the chemical solution is an alkaline cleaning solution. See col.7, line 61 to col.8, line 5.

4. Claims 6, 8, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashida et al and Filson et al as applied to claim 4 above, and further in view of Prigge et al (U.S. Patent No. 4,973,563).

Hayashida et al is silent as to whether the wafer has a hydrophobic surface. Prigge et al, however, discloses that treating the wafer (by polishing) to give a hydrophobic surface will prevent it from being wetted and thereby, will prevent it from being contaminated by contaminants dispersed in aqueous phases. See col.4, lines 33-37. As Hayashida et al specifically teaches the avoidance of contamination of the wafer surface (see Abstract), it would have been obvious to first treat the wafer surfaces of Hayashida et al in order to render them hydrophobic.

#### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.


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*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 703-305-3387 until December 15, 2003. After December 15, 2003 the examiner can be reached at 571-272-1275. The examiner can normally be reached on Monday-Wednesday (7:15 am-4:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 703-308-2920 or at 571-272-1281 after December 15, 2003. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
**Leigh McKane**  
**Primary Examiner**  
**Art Unit 1744**

elm  
3 November 2003